

gene constructs are transferred via Agrobacterium GV3101 to petunia variety W115, using the transformation method as described in example 7. Transgenic petunia plants were selected that exhibit modified sugar composition in nectar.

Please delete the Sequence Listing appearing on page 39, line 1 - page 47, line 1 in entirety and rewrite as shown attached.

IN THE CLAIMS:

Please amend the following claims.

3. (Amended) An isolated DNA sequence according to claim 1, obtained from a plant of *Petunia hybrida*, the sequence consisting essentially of the sequence given in SEQ ID N0:7, or a functional fragment thereof having promoter activity.

5. (Amended) An isolated DNA sequence according to claim 4 having:

- a) a nucleotide sequence given in SEQ ID N0:4, or
- b) a nucleotide sequence that hybridises with the nucleotide sequence of (a) or with a fragment of (a) under the following hybridisation conditions: pre-hybridisation for 1h at about 65 °C in a solution of Church and Gilbert, comprising 0.5 M sodium phosphate, pH 7.2, 1 mM EDTA, 1% BSA, 7% SDS, followed by hybridisation in the same solution for 18h at about 65 °C, followed by washing three times in 0.1 x SSC, 0.1% SDS at about 65 °C for 30 min., or
- c) a nucleotide sequence that has at least 85% homology to the nucleotide sequence of a).

9. (Amended) An isolated DNA sequence according to claim 8, having:

- a) a nucleotide sequence given in SEQ ID N0:6 obtained from a plant of *Calluna vulgaris*, or
- b) a nucleotide sequence that hybridises with the nucleotide sequence given in a), under the following hybridisation conditions: pre-hybridisation for 1h at about 65 °C in a solution of Church and Gilbert, comprising 0.5 M sodium phosphate, pH 7.2, 1 mM EDTA, 1% BSA, 7% SDS, followed by hybridisation in the same solution for 18h at about 65 °C, followed by washing three times in 0.1 x SSC, 0.1% SDS at about 65 °C for 30 min., or
- c) a nucleotide sequence that has at least 95% homology to the nucleotide sequence of a).

10. (Amended) A recombinant double-stranded DNA molecule comprising an expression cassette comprising the following constituents:

- i) a promoter functional in plants,
- ii) DNA sequence coding for a protein as defined in claim 4 which is fused to the promoter sequence in sense or antisense orientation, and optionally

- iii) a signal sequence functional in plants for the transcription determination and polyadenylation of an RNA molecule.

13. (Amended) A recombinant double-stranded DNA molecule according to claim 11 wherein the promoter is an isolated DNA sequence from the promoter region upstream of a nectary-specific expressed sequence, which nectary-specific expressed sequence encodes a protein comprising the amino acid sequence given in SEQ ID NO:1, or a protein that has at least 60% homology to the amino acid sequence given in SEQ ID NO:1.

14. (Amended) A recombinant double-stranded DNA molecule according to claim 12 wherein the DNA sequence encoding a signal peptide is an isolated DNA sequence comprising the coding region for a signal peptide, wherein the information contained in the DNA sequence permits, upon translational fusion with a DNA sequence encoding a protein that is expressed in nectaries, targeting of the protein to nectar.

15. (Amended) A process for producing a transgenic plant exhibiting excretion of a recombinant protein in its nectar, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim 12, wherein the recombinant protein is excreted in nectar,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

16. (Amended) A process for producing a transgenic plant exhibiting a modified nectar composition, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim 11, wherein the recombinant protein interferes with metabolic pathways in the nectaries,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

17. (Amended) A process for producing a transgenic plant exhibiting a modified nectar secretion, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim 11, wherein the recombinant protein interferes with sink strength of nectaries,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

18. (Amended) A process for producing a transgenic plant exhibiting a modified nectary development, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim 11, wherein the recombinant protein interferes with the development of nectaries,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

19. (Amended) A process for producing honey from modified nectar of transgenic plants, comprising:

- i) producing a transgenic plant by introducing in a plant cell a recombinant double-stranded DNA molecule as defined in claim 11, regenerating plants from the transgenic cell, and selecting modified plants exhibiting the excretion of nectar with a modified composition,
- ii) allowing insects to collect nectar from the transgenic plants and to process the nectar into honey.

20. (Amended) A process for producing a recombinant gene product from honey, comprising:

- ii) producing a transgenic plant by introducing in a plant cell a recombinant- double-stranded DNA molecule as defined in claim

12, regenerating plants from the transgenic cell, and selecting modified plants exhibiting excretion of the recombinant gene product in nectar,

- ii) allowing insects to collect nectar from the transgenic plants and to process the nectar into honey, and
- iii) isolating and purifying the gene product from the honey.

2.2. (Amended) Micro organisms containing DNA sequences according to claim 1.

23. (Amended) Micro organisms containing recombinant DNA molecules according to claim 10.

24. (Amended) A plant cell or plant cell culture transformed with one or more DNA sequences according to claim 1.

25. (Amended) A plant cell or plant cell culture transformed with recombinant DNA molecules according to claim 10.

26. (Amended) A plant consisting essentially of the plant cells of claim 24.

27. (Amended) A transgenic plant obtained by the process of claim 15.

IN THE CLAIMS:

3. (Amended) An isolated DNA sequence according to claim 1 [or 2], obtained from a plant of *Petunia hybrida*, the sequence consisting essentially of the sequence given in SEQ ID N0:7, or a functional fragment thereof having promoter activity.

5. (Amended) An isolated DNA sequence according to claim 4 having:

- a) a nucleotide sequence given in SEQ ID N0:4, or
- b) a nucleotide sequence that hybridises with the nucleotide sequence of (a) or with a fragment of (a) under the following hybridisation conditions: pre-hybridisation for 1h at about 65 °C in a solution of Church and Gilbert, comprising 0.5 M sodium phosphate, pH 7.2, 1 mM EDTA, 1% BSA, 7% SDS, followed by hybridisation in the same solution for 18h at about 65 °C, followed by washing three times in 0.1 x SSC, 0.1% SDS at about 65 °C for 30 min. [as defined in claim 2], or
- c) a nucleotide sequence that has at least 85% homology to the nucleotide sequence of a).

9. (Amended) An isolated DNA sequence according to claim 8, having:

- a) a nucleotide sequence given in SEQ ID N0:6 obtained from a plant of *Calluna vulgaris*, or
- b) a nucleotide sequence that hybridises with the nucleotide sequence given in a), under the following hybridisation conditions: pre-hybridisation for 1h at about 65 °C in a solution of Church and Gilbert, comprising 0.5 M sodium phosphate, pH 7.2, 1 mM EDTA, 1% BSA, 7% SDS, followed by hybridisation in the same solution for 18h at about 65 °C, followed by washing three times in 0.1 x SSC, 0.1% SDS at about 65 °C for 30 min. [as defined in claim 2], or
- c) a nucleotide sequence that has at least 95% homology to the nucleotide sequence of a).

10. (Amended) A recombinant double-stranded DNA molecule comprising an expression cassette comprising the following constituents:

- i) a promoter functional in plants,
- ii) DNA sequence coding for a protein as defined in claim 4 [any of claims 4 to 7] which is fused to the promoter sequence in sense or antisense orientation, and optionally
- iii) a signal sequence functional in plants for the transcription determination and polyadenylation of an RNA molecule.

13. (Amended) A recombinant double-stranded DNA molecule according to claim 11 [or 12] wherein the promoter is an isolated DNA sequence from the promoter region upstream of a nectary-specific expressed sequence, which nectary-specific expressed sequence encodes a protein comprising the amino acid sequence given in SEQ ID NO:1, or a protein that has at least 60% homology to the amino acid sequence given in SEQ ID NO:1. [as defined in any of claims 1-3].

14 (Amended) A recombinant double-stranded DNA molecule according to claim 12 [or 13] wherein the DNA sequence encoding a signal peptide is an isolated DNA sequence comprising the coding region for a signal peptide, wherein the information contained in the DNA sequence permits, upon translational fusion with a DNA sequence encoding a protein that is expressed in nectaries, targeting of the protein to nectar. [as defined in claim 8 or 9].

15. (Amended) A process for producing a transgenic plant exhibiting excretion of a recombinant protein in its nectar, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim 12 [any of claims 12 to 14], wherein the recombinant protein is excreted in nectar,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

16. (Amended) A process for producing a transgenic plant exhibiting a modified nectar composition, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim [any of claims] 11 [to 14], wherein the recombinant protein interferes with metabolic pathways in the nectaries,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

17. (Amended) A process for producing a transgenic plant exhibiting a modified nectar secretion, comprising:

- i) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim [any of claims] 11 [to 14], wherein the recombinant protein interferes with sink strength of nectaries,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

18. (Amended) A process for producing a transgenic plant exhibiting a modified nectary development, comprising:

- ii) introducing in a plant cell a recombinant double-stranded DNA-molecule as defined in claim [claims] 11 [or 14], wherein the recombinant protein interferes with the development of nectaries,
- ii) regenerating plants from the transgenic cell, and
- iii) selecting transgenic plants.

19. (Amended) A process for producing honey from modified nectar of transgenic plants, comprising:

- i) producing a transgenic plant by introducing in a plant cell a recombinant double-stranded DNA molecule as defined in claim [any of claims] 11 [to 14], regenerating plants from the transgenic cell, and selecting modified plants exhibiting the excretion of nectar with a modified composition,
- ii) allowing insects[, preferably bees,] to collect nectar from the transgenic plants and to process the nectar into honey.

20. (Amended) A process for producing a recombinant gene product from honey, comprising:

- i) producing a transgenic plant by introducing in a plant cell a recombinant- double-stranded DNA molecule as defined in claim [any of claims] 12 [to 14], regenerating plants from the transgenic cell, and selecting modified plants exhibiting excretion of the recombinant gene product in nectar,
- ii) allowing insects[, preferably bees,] to collect nectar from the transgenic plants and to process the nectar into honey, and
- iii) isolating and purifying the gene product from the honey.

22. (Amended) Micro organisms containing DNA sequences according to claim [one or more of claims] 1 [to 9].

23. (Amended) Micro organisms containing recombinant DNA molecules according to claim [any of claims] 10 [to 14].

24. (Amended) A plant cell or plant cell culture transformed with one or more DNA sequences according to claim [claims] 1 [to 9].

25. (Amended) A plant cell or plant cell culture transformed with recombinant DNA molecules according to claim [any of] 10 [to 14].

26. (Amended) A plant consisting essentially of the plant cells of claim [claims] 24 [or 25].

27. (Amended) A transgenic plant obtained by the process of claim [any of claims] 15 [to 18].